
EXHIBIT
C

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Samuel N. Hansen	
For:	EXTRACTION CLEANING WITH OPTIMAL CLEANING SPEED	
Serial No.:	10/044,890	Examiner: Theresa T. Snider
Filed:	01/11/02	Group Art Unit: 1744
Atty. Docket:	71189-1393	Confirmation No.: 1886

CERTIFICATE OF MAILING/TRANSMISSION (37 CFR 1.8(a))

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Christine M. Judge
Signature

Date: February 19, 2004

Christine M. Judge
(type or print name of person certifying)

Commissioner for Patents
Alexandria, VA 22313-1450

Sir:

AMENDMENT AND RESPONSE TO OFFICE ACTION

In response to the Office Action mailed November 19, 2003, kindly amend the application as follows:

Amendments to the Claims are reflected in the listing of claims that begin on page 2 of this paper.

Amendments to the Specification begin on page 8 of this paper.

Remarks begin on page 10 of this paper.

Please approve entry of the drawings shown on the photocopies attached hereto. Clean copies of the amended drawings are enclosed for entry.

In the Claims:

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Currently amended) ~~The~~ An extraction surface cleaning apparatus having:

a housing;

at least two wheels mounted to the housing for supporting the housing for movement along a surface to be cleaned;

a liquid dispensing system mounted to the housing and including:

a liquid dispensing nozzle for applying a cleaning fluid to the surface to be cleaned;

a fluid supply chamber for holding a supply of cleaning fluid;

a fluid supply conduit fluidly connected to the fluid supply chamber and to the dispensing nozzle for supplying liquid to the dispensing nozzle;

a fluid recovery system mounted to the housing and including:

a recovery chamber for holding recovered fluid,

a suction nozzle,

a working air conduit extending between the recovery chamber and the suction nozzle; and

a vacuum source in fluid communication with the recovery chamber for generating a flow of working air from the suction nozzle through the working air conduit and through the recovery chamber to thereby draw dirty liquid from the surface to be cleaned through the suction nozzle and the working air conduit, and into the recovery chamber;

a detector mounted on the housing for sensing the speed of the housing across the surface being cleaned and for generating a speed signal representative thereof;

an output device mounted on the housing and coupled to the detector for displaying or audibly expressing the relative speed of the housing across the surface being cleaned;

wherein the detector is aligned with and adjacent to one of the at least two wheels and is adapted to detect the rotational motion of the one of the at least two wheels without physically contacting the wheel; and

a first disk portion mounted to the one of the at least two wheels for rotation therewith; and wherein the detector is aligned with and adjacent to the first disk portion adapted to generate a speed signal representative of the rotation of the first disk portion;

the improvement comprising:

~~of claim 3~~ wherein the first disk portion has alternating opposite-polarity magnetic segments thereon and the ~~second pick-up portion~~ detector is adapted to ~~detect~~ sense the rotational speed of the first disk portion by detecting changes in the magnetic polarity of a particular segment of the first disk portion ~~located adjacent to the second pick-up portion~~.

5. (Currently amended) The extraction surface cleaning apparatus of claim 4 wherein the output device comprises a converter interconnected with the detector and adapted to change the speed signal from the detector into a visual indicator of the speed of the housing across the ~~floor~~surface.

6. (Original) The extraction surface cleaning apparatus of claim 5 wherein the visual indicator comprises at least one light-emitting diode that emits light representative of the speed signal received from the detector.

7. (Original) The extraction surface cleaning apparatus of claim 6 wherein the at least one light-emitting diode comprises a series of light-emitting diodes wherein output device illuminates a particular number of the series of light-emitting diodes proportional to the speed signal received from the detector.

8. (Currently amended) An extraction surface cleaning apparatus having:

an extraction housing including a suction nozzle adapted to be moved along a floor surface to be cleaned;

a handle pivotally mounted to the extraction housing for grasping by a user and propelling the extraction housing over the floor surface;

a cleaning fluid delivery system interconnected with the extraction housing and movable therewith to apply a cleaning solution to the floor surface;

a fluid recovery system interconnected with the extraction housing to recover soiled cleaning solution from the floor surface;

a detector mounted to the extraction housing for detecting the relative speed of the extraction housing relative to the floor surface and for generating a signal representative of the detected speed; and

an output device operably interconnected with the detector, adapted to receive the signal generated by the detector and to indicate to ~~a~~ the user the detected relative speed of the extraction housing.

9. (Currently amended) The extraction surface cleaning apparatus of claim 8 wherein the ~~indicator~~ output device is mounted to the handle.

10. (Currently amended) The extraction surface cleaning apparatus of claim 9 wherein the indicator is mounted in a line of sight of ~~a~~ the user between a position behind the handle and the extraction housing.

11. (Cancelled)

12. (Original) The extraction surface cleaning apparatus of claim 8 wherein the fluid delivery and fluid recovery systems are carried on the extraction housing.

13. (Currently amended) The extraction surface cleaning apparatus of claim 8 and further comprising at least two wheels mounted to the extraction housing, and wherein the detector is aligned with and adjacent to one of the at least two wheels and is adapted to detect the rotational motion of the one of the at least two wheels without physically contacting the wheel.

14. (Currently amended) The extraction surface cleaning apparatus of claim 13 ~~wherein the detector~~ and further comprisinges a first disk portion mounted to the one of the at least two wheels for rotation therewith; and ~~a second pick-up portion fixedly mounted to the housing~~ the detector is aligned with and adjacent to the first disk portion and is adapted to generate a speed signal representative of the rotational speed of the first disk portion.

15. (Currently amended) The extraction surface cleaning apparatus of claim 14 wherein the first disk portion has alternating opposite-polarity magnetic segments thereon and the ~~second pick-up portion~~ detector is adapted to detect the rotational speed of the first disk portion by detecting changes in the magnetic polarity of a particular segment of the first disk portion located adjacent to the ~~second pick-up portion~~detector.

16. (Original) The extraction surface cleaning apparatus of claim 15 wherein the output device comprises a converter interconnected with the detector and adapted to change the speed signal from the detector into a visual indicator of the speed of the housing across the floor.

17. (Original) The extraction surface cleaning apparatus of claim 16 wherein the visual indicator comprises at least one light-emitting diode that emits light representative of the speed signal received from the detector.

18. (Currently amended) The extraction surface cleaning apparatus of claim 17 wherein the at least one light-emitting diode comprises a series of light-emitting diodes wherein the output device illuminates a particular number of the series of light-emitting diodes proportional to the speed signal received from the detector.

19. (Cancelled)

20. (Currently amended) ~~A~~ The method of cleaning a floor surface with an extraction cleaner according to claim ~~19~~ 23 wherein the communicating step comprises generating a visual signal.

21. (Currently amended). ~~A~~ The method of cleaning a floor surface with an extraction cleaner according to claim ~~19~~ 23 wherein the communicating step comprises generating an audible signal.

22. (Cancelled)

23. (Currently amended) A method of cleaning a floor surface with an extraction cleaner comprising the steps of:

moving the extraction cleaner across the floor surface;

depositing a cleaning solution from the extraction cleaner on the floor surface;

recovering soiled cleaning solution from the floor surface with the extraction cleaner;

detecting the relative speed of the extraction cleaner with respect to the floor surface and generating a speed signal;

~~The method of claim 19 and further comprising the step of~~ generating a predetermined reference signal of a desired speed of the extraction cleaner;~~and~~

comparing the reference signal to the speed signal; and

communicating to a user an indication of whether the detected relative speed of the extraction cleaner is above or below the desired speed of the extraction cleaner.

24. (Currently amended) The method of claim 23 and further comprising the step of alerting ~~a~~ the user if the difference between the reference signal and the speed signal exceeds a predetermined threshold.

25. (New) An extraction surface cleaning apparatus having:

a housing;

at least two wheels mounted to the housing for supporting the housing for movement along a surface to be cleaned;

a liquid dispensing system mounted to the housing and including:

a liquid dispensing nozzle for applying a cleaning fluid to the surface to be cleaned;

a fluid supply chamber for holding a supply of cleaning fluid;

a fluid supply conduit fluidly connected to the fluid supply chamber and to the dispensing nozzle for supplying liquid to the dispensing nozzle;

a fluid recovery system mounted to the housing and including:

a recovery chamber for holding recovered fluid,

a suction nozzle,

a working air conduit extending between the recovery chamber and the suction nozzle; and

a vacuum source in fluid communication with the recovery chamber for generating a flow of working air from the suction nozzle through the working air conduit and through the recovery chamber to thereby draw dirty liquid from the surface to be cleaned through the suction nozzle and the working air conduit, and into the recovery chamber;

a detector mounted on the housing for sensing the speed of the housing across the surface being cleaned and for generating a speed signal representative thereof; and

an output device mounted on the housing and coupled to the detector for receiving the speed signal, the output device further having a display that indicates a predetermined optimum cleaning speed for the extraction surface cleaning apparatus across the surface and wherein the output device is adapted to display an indication of whether the relative speed of the housing across the surface being cleaned is above or below the predetermined optimum cleaning speed.

In the Specification:

Kindly amend the specification as follows:

Please replace paragraph [0001] with the following amended paragraph:

This application is a continuation-in-part of U.S. patent application serial number 09/593,126, filed June 13, 2000, now U.S. Patent No. 6,446,302.

Please replace paragraph [0026] with the following amended paragraph:

The extraction cleaning machine according to the invention can be of any known type of extraction cleaning machine including, but not limited to those disclosed in U.S. Patents No. 6,167,587 and 5,937,475, both of which are incorporated herein by reference. A preferred embodiment of the extraction cleaning machine is shown in U.S. Patent Application Serial No. 09/593,126, filed June 13, 2000, now U.S. Patent No. 6,446,302, which is also specifically incorporated herein by reference.

Please replace paragraph [0033] with the following amended paragraph:

Referring to FIG. 5, the magnetic pick-up device 28 is shown in greater detail comprising a reed switch 46 at one end thereof interconnected to a terminated connector 48 by a suitable conduit, such as wiring ~~50~~49. The reed switch 46 is configured to close when immersed in a uniform magnetic field. Preferably, a minimum field strength to close the reed switch 46 is approximately 10 gauss. For optimum performance, testing indicates that a preferable field strength of 15.8 gauss is required. For application with the extraction cleaner 10 described herein, any of the many known switching and pick-up devices can be employed without departing from the scope of this invention. By way of example only, one appropriate reed switch 46 among the many available can be ALF Part. No. HYR-1532 or Gentech Part No. GR21 and can be preferably specified to operate at 250V DC with a maximum switching voltage of 200V DC, a contact rating of 10W, and a maximum switching current of 0.5A.

Please replace paragraph [0037] with the following amended paragraph:

In assembly, as shown in FIGS. 1-2 and 8-9, the central opening 40 of the keyed magnetic disk 26 is inserted onto the shaft 44 of one of the wheels 22 of the extraction cleaner 10 so that the keyed magnetic disk 26 rotates directly with the wheel 22 as a result of the engagement of the discontinuous protrusion 42 of the central opening 40 of the keyed magnetic disk 26 with the similar protrusion on the central shaft 44 of the wheel 22. The reed switch 46 is preferably mounted within the extraction cleaner 10 to be adjacent to and aligned with the keyed magnetic disk 26 as shown in FIG. 9. Preferably, the reed switch 46 is fixed in a location no further away than 0.200 inches from the magnetic disk 26. The wiring ~~50~~ 49 of the magnetic pick-up device 28 is extended through the extraction cleaner 10 and interconnected to the suitable connector 68 on the circuit board 50 of the circuit componentry 30.

REMARKS

By the present amendment, claims 1-3, 11, 19 and 22 have been cancelled. Claims 4, 5, 8-10, 13-15, 18, 20, 21, 23, and 24 have been amended. New claim 25 has been added.

In the Office Action, the drawings have been objected to as failing to comply with 37 C.F.R. § 1.84(p)(4)(5). Submitted herewith are proposed drawing corrections to FIGS. 5, 7, and 8 which Applicant believes will overcome the drawing objections. Clean copies of these corrected drawings are also enclosed herewith for entry by the Examiner.

The specification was objected to because the status of the copending application was not updated. By the present amendment, the status of the parent copending application has been added.

Claims 1-24 have been rejected under 35 U.S.C. § 112 second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards of the invention. Applicant has amended the claims by the present amendment to obviate any indefiniteness of the claims in accordance with the Examiner's suggestions. The claims as amended are believed to be free of any objections under 35 U.S.C. § 112.

Claims 1-3, 8, 12-14, 19-20, and 22 have been rejected under 35 U.S.C. § 102(b) as being anticipated by the Hasegawa et al. U.S. Patent No. 5,357,649 (Hasegawa et al. '649 patent). This rejection is respectfully traversed. By the present amendment, claims 1-3, 11, 19, and 22 have been cancelled. Allowed claim 4 has been rewritten in independent form. Further, limitations of claim 11 have been incorporated into independent claim 8. It is thus believed that claim 8 is allowable. Claims 9, 10, and 12-18 depend directly or indirectly from amended claim 8. It is believed that all of these dependent claims are likewise allowable.

Claims 19-20, and 22 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Field U.S. Patent No. 4,766,432. This rejection is respectfully traversed. Claims 19 and 22 have been cancelled and claim 20 has been amended to depend from amended claim 23. Thus, the rejection of these claims over Field '432 is believed to be moot.

Claims 9 and 10 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Hasegawa et al. '649. This rejection is respectfully traversed.

Claims 9 and 10 depend from claim 8, which is believed to be allowable in view of the amendments made by the present amendment.

Claims 1 and 2 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted state of the prior art as set forth in the preamble of the Jepson claim (aspa) in view of the Kubo et al. U.S. Patent No. 5,636,402. This rejection is respectfully traversed. Inasmuch as claims 1 and 2 have been cancelled, it is believed that this rejection is moot.

Claim 21 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Field '432. This rejection is respectfully traversed. The Field '432 patent discloses a commercial floor scrubber mounted to a forklift and controlled from a remote signal. Speed and direction signals are transmitted through a controller. The speed signal is not displayed. A condition display and an alarm to indicate the failure of switches or a condition is disclosed.

Claim 21 calls for the step of communicating to the user an audible signal representative of the detected relative speed of the extraction cleaner. The Field reference does not disclose or suggest this step. It is thus believed that claim 21 patentably distinguishes over the prior art.

Claims 23 and 24 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Field '432 in view of the Kubo et al. '402 patent. This rejection is respectfully traversed.

The Kubo et al. '402 patent discloses a robotic extractor in which the speed of the vehicle is detected and used to control the amount of solution that is deposited onto a floor surface. FIGS. 36 and 38 disclose a grip handle that includes a speed adjustment control 215 and a speed label for the speed adjustment knob.

The alleged combination of Field '432 and Kubo et al. '402 traversed. There is no basis for making the alleged combination. These machines are significantly different and there is no suggestion as to how the comparison of the Kubo et al. '402 patent could be incorporated into the Field '432 maintenance machine. The Examiner has not demonstrated any link that would enable this combination to be made.

Even if the combination were to be made, however, untenably, it still would not reach the limitations of claims 23 and 24. Claim 23 calls for the step of generating a predetermined reference signal and comparing the reference signal to the speed signal. It further calls for the

step of communicating to the user a detected relative speed of the extraction cleaner. This concept is not disclosed in the alleged combination of Field '432 and Kubo et al. '402. As indicated above, Field '432 does not disclose an indication of the relative speed of the maintenance machine. Thus, the combination lacks this step.

In view of the foregoing, it is submitted that all of the claims in the application are in condition for allowance. Early notification of allowability is respectfully requested.

Respectfully submitted,

SAMUEL N. HANSEN

Dated: 2-19-04

By: _____

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G0118339

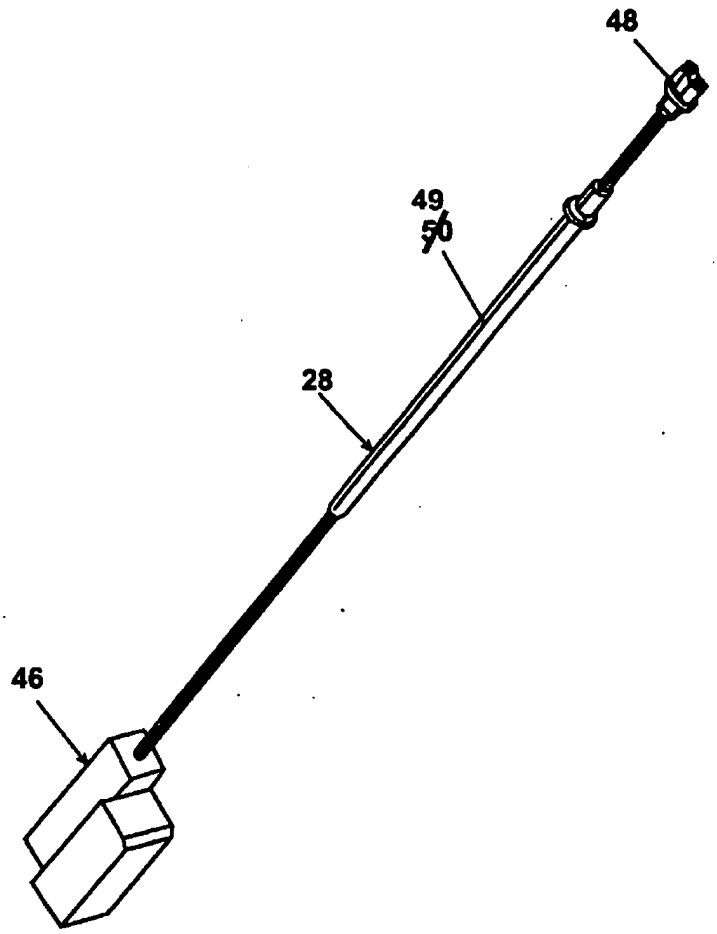

Fig. 5

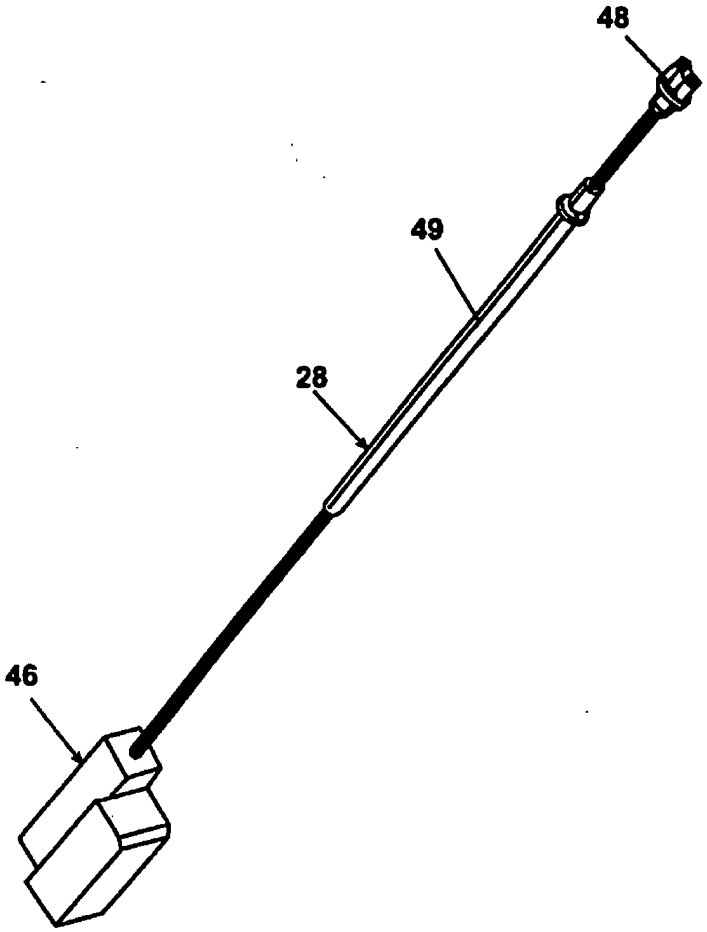

Fig. 5

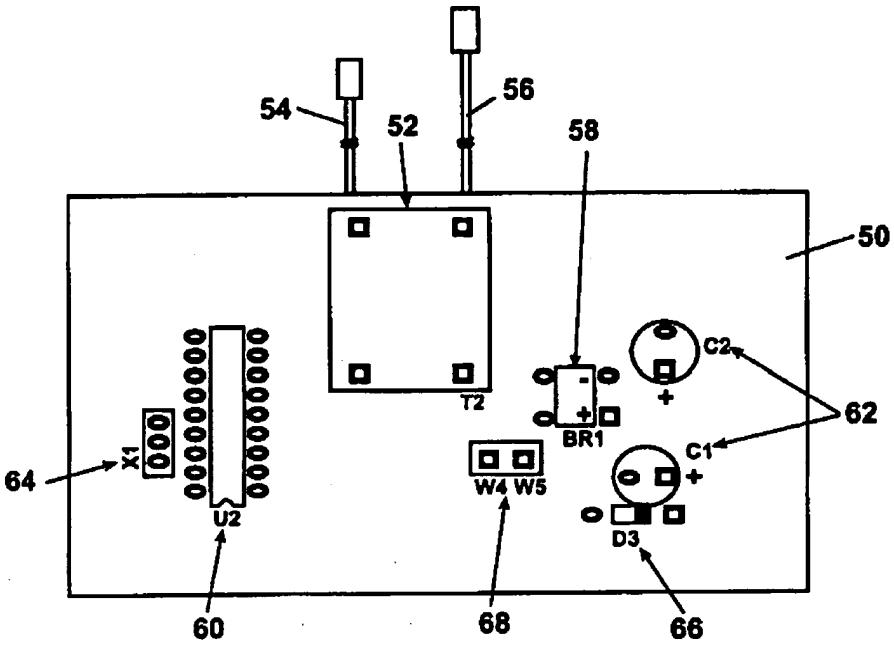
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Fig. 6

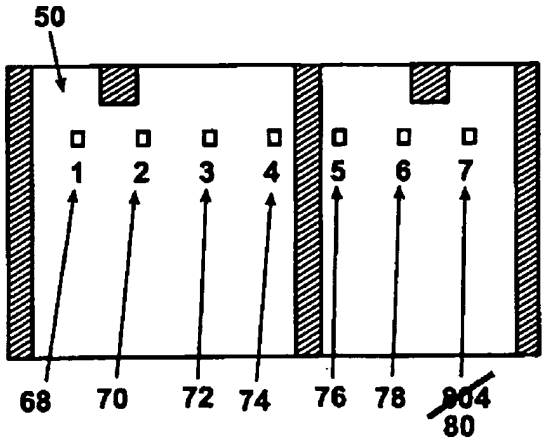
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Fig. 7

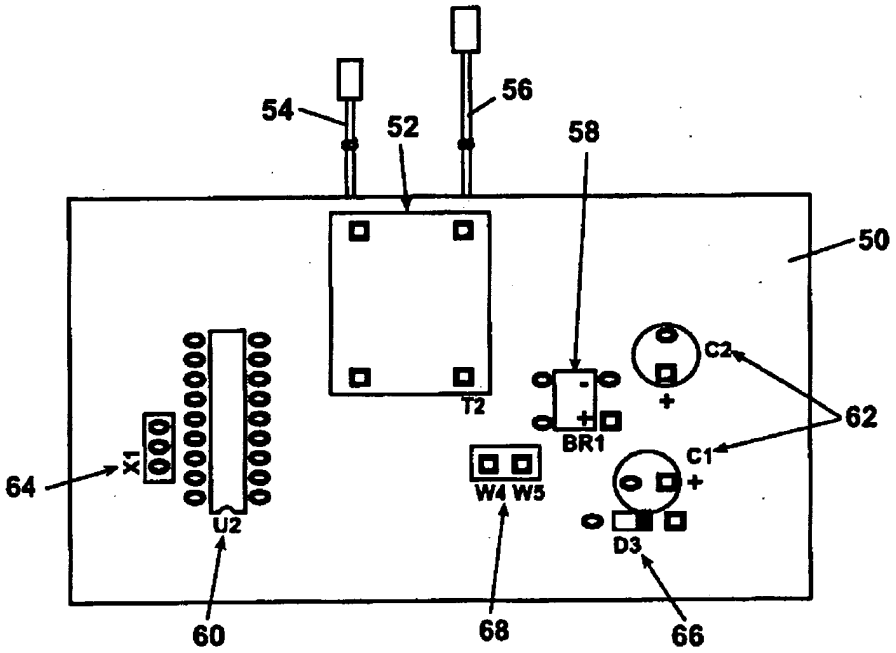
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Fig. 6

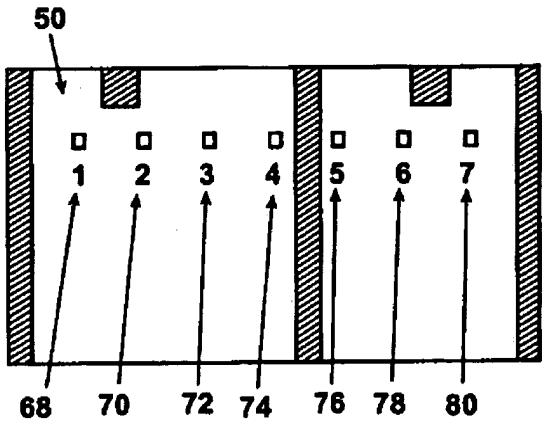
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Fig. 7

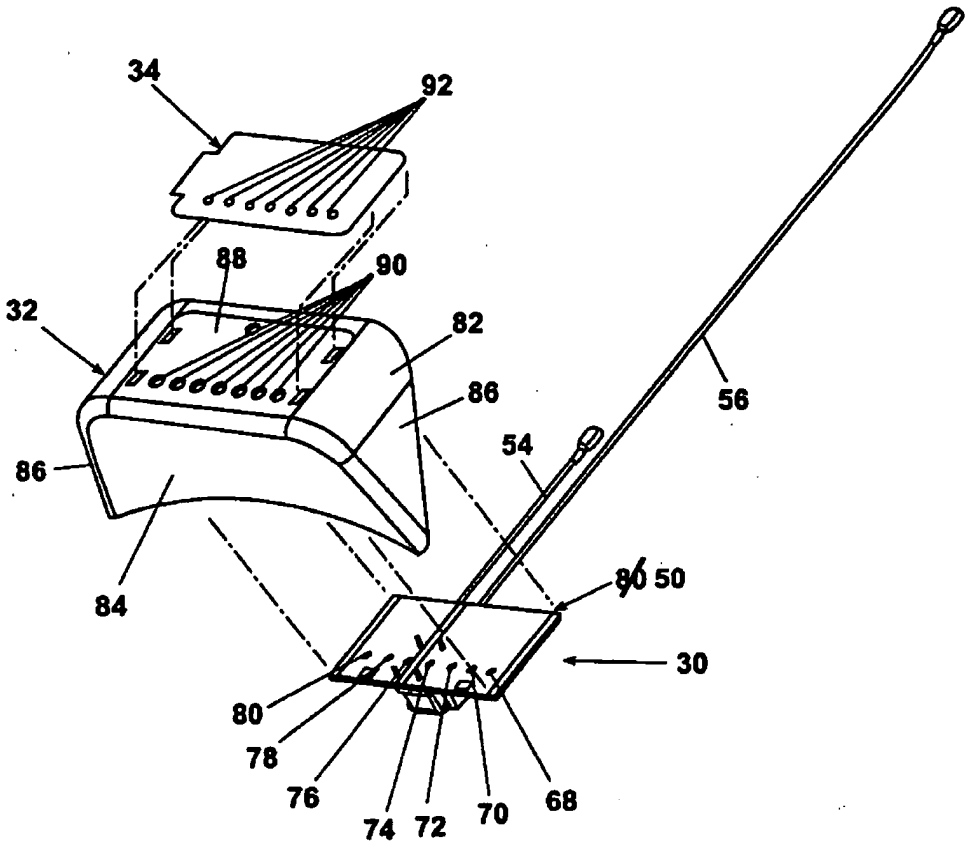

Fig. 8

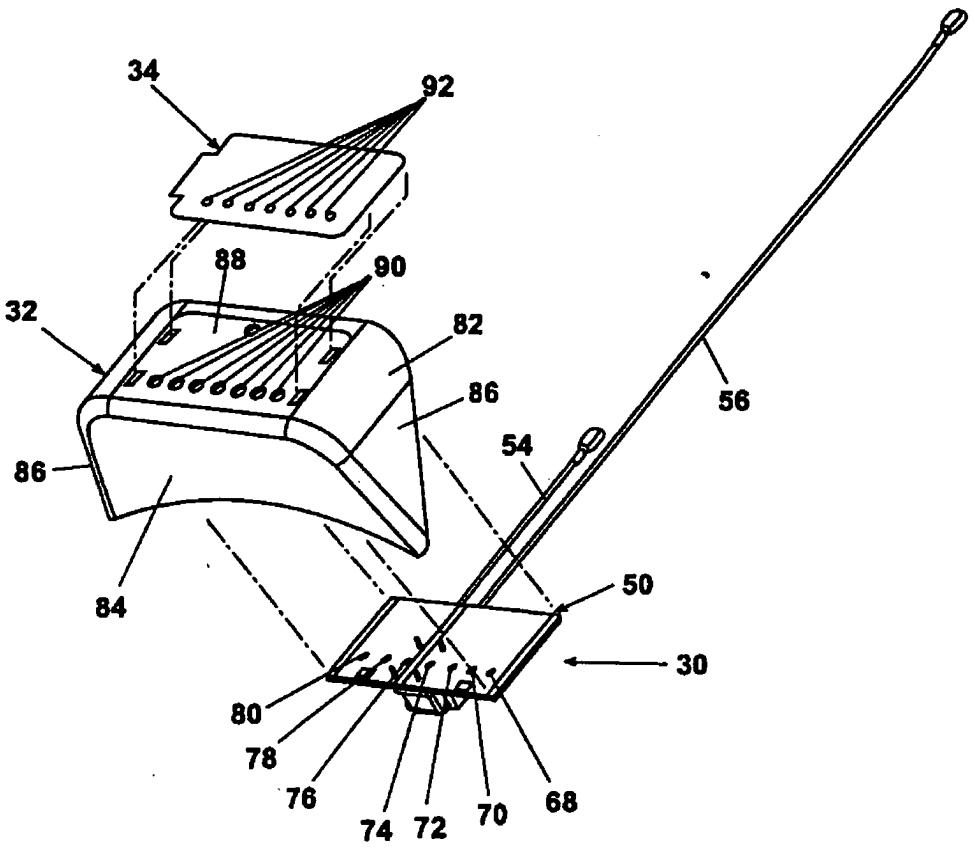

Fig. 8

********** -COMM. JL- ********** DATE FEB-19-2004 ** TIME 16:42 *** P.01

MODE = MEMORY TRANSMISSION START=FEB-19 16:36 END=FEB-19 16:42

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Date: February 19, 2004

Signature

Christine M. Judge

(type or print name of person certifying)

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